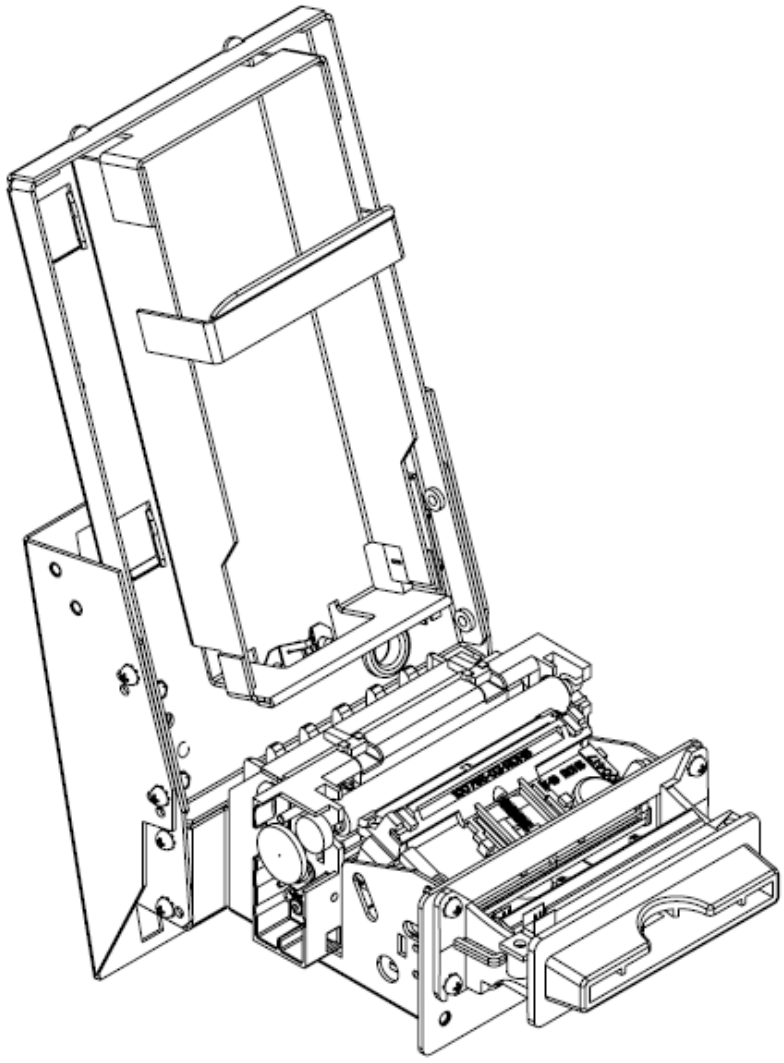
PayCheck™ Slim PRINTER

Service Manual



First Edition December 11, 2009
August 29, 2011
Document # 720006-0000

Nanoptix

Legal Notices

Disclaimer
Information in this document is subject to change without notice. Consult your Nanoptix Inc. sales representative for information that is applicable and current. Nanoptix Inc. reserves the right to improve products as new technology, components, software and firmware become available.

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose without the express written permission of Nanoptix Inc.

Copyright
Copyright 2003 by Nanoptix Inc.
Dieppe, New Brunswick Canada
All rights reserved
Printed in Canada
Confidential, Unpublished
Property of Nanoptix Inc.

Trademarks

Epson is registered trademark of Epson Corporation.

Windows is registered trademark of Microsoft Corporation.

Nanoptix is a trademark. Other trademarks and registered trademarks are the property of their respective holders.

Federal Communications Commission (FCC)
Radio Frequency Interference Statement

Warning
Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Information to the User
This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to contact Nanoptix Inc. immediately.

Nanoptix Inc. is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Nanoptix Inc. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

In order to ensure compliance with the Product Safety, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable, which were shipped with this product or which meet the following parameters:

Power Supply
UL Listed power supply with standard 60Hz-50Hz, 100-240VAC input and 24VDC output equipped with AC line filtering, over-current and short-circuit protection.

Use of this product with a power supply other than the Nanoptix Inc. power supply will require you to test the power supply and Nanoptix Inc. printer for FCC and CE mark certification.

Communication Interface Cable
An approved Nanoptix interface cable must be used with this product. Use of a cable other than Nanoptix approved product will require that you test the cable with the Nanoptix Inc. printer and your system for FCC and CE mark certification.

Power Cord
A UL listed, detachable power cord must be used. A power cord with Type SVT marking must be used. For applications outside the North America, power cords that meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications that is in force in the country of use.

Industry Canada (IC)
Radio Frequency Interference Statement
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Table of Contents

About the Printer *1*

1.1 Description of Printer **1**

1.2 General specifications **2**

1.3 Paper Loading **3**

1.3.1 Paper Feed Button 4

1.4 Printer Controls **5**

1.4.1 Printer Reset (Service use only) 5

1.4.2 LED 6

1.5 Printer Interface Ports **7**

1.5.1 LED 8

1.6 Testing the Printer **9**

1.7 Clearing Jams **10**

2 Troubleshooting the Printer *11*

2.1 Basic Printer Operation **11**

2.1.1 Communication Cables Pin-Out 12

2.2 Printing Problems **13**

2.2.1 Troubleshooting with LED 14

3 Media and Supplies Guide *15*

3.1 Thermal Paper Specifications **15**

3.2 Ordering Thermal Paper **17**

3.3 Parts List **18**

4 Mechanical Drawings *20*

5 Spare parts replacement instructions *25*

6 Printer Maintenance Instructions *32*

7 Service & Support *37*

7.1 Returning printers back to Nanoptix for repairs (RMA) **37**

7.2 Technical Support Contact Information **37**

Figures

FIGURE 1: NANOPTIX PAYCHECK SLIM PRINTER 1
FIGURE 2: TICKET STACK ORIENTATION 3
FIGURE 3: PAPER FEED BUTTON 4
FIGURE 4: PRINTER RESET 5
FIGURE 5: INTERFACE PORTS 7
FIGURE 6: LED POSITIONS 8
FIGURE 7: SAMPLE TEST TICKET 9
FIGURE 8: CLEARING JAMS 10
FIGURE 9: PERFORATION TEST 15
FIGURE 10: TICKET SPECIFICATIONS 16
FIGURE 11: SIDE VIEW - MOUNTED IN POSITION A 20
FIGURE 12: SIDE VIEW - MOUNTED IN POSITION B 21
FIGURE 13: SIDE VIEW - MOUNTED IN POSITION C 22
FIGURE 14: FRONT VIEW 23
FIGURE 15: BACK VIEW 24
FIGURE 16: MOUNTING BRACKET (A) 25
FIGURE 17: MOUNTING BRACKET (B) 26
FIGURE 18: BACK PLATE 26
FIGURE 19: PRINTER MECH. 27
FIGURE 20: PCB REMOVAL (A) 28
FIGURE 21: PCB REMOVAL (B) 28
FIGURE 22: PAPER GUIDE SENSOR 30
FIGURE 23: DISASSEMBLY 31
FIGURE 24: REMOVE TOP PAPER GUIDE 32
FIGURE 25: REMOVE ROLLER 32
FIGURE 26: CLEAN ROLLER 33
FIGURE 27: CLEAN PAPER GUIDE SENSOR USING COTTON SWAB 33
FIGURE 28: BOTTOM PAPER GUIDE INSPECTION 34
FIGURE 29: INSPECT PAPER GUIDE 35
FIGURE 30: CLEAR DUST OFF GEARS USING LIGHT BRUSH 35
FIGURE 31: CLEAN PRINT LINE 36

Tables

TABLE 1: SPECIFICATIONS 2
TABLE 2: INTERFACE PORTS 7
TABLE 3: LED INFORMATION 8
TABLE 4: RS232 RECEPTACLE INTERFACE (FEMALE) 12
TABLE 5: 14-PIN RS-232 UNIVERSAL INTERFACE PIN-OUT 12
TABLE 6: PIN-OUT AND SIGNALS OF FRONT MOLEX (FOR BEZEL) 12
TABLE 7: TROUBLESHOOTING PRINTING PROBLEMS 13
TABLE 8: TROUBLESHOOTING WITH LED 14
TABLE 9: PAPER SPECIFICATIONS 15
TABLE 10: ORDERING THERMAL PAPER 17
TABLE 11: PARTS LIST 19

About the Printer

1.1 Description of Printer

The Nanoptix PayCheck Slim printer, is extremely fast, quiet, and very reliable. With thermal printing technology, there is no ribbon cassette to change, and paper loading is extremely simple. The printer's intuitive design enables it to fit in very narrow cabinets.

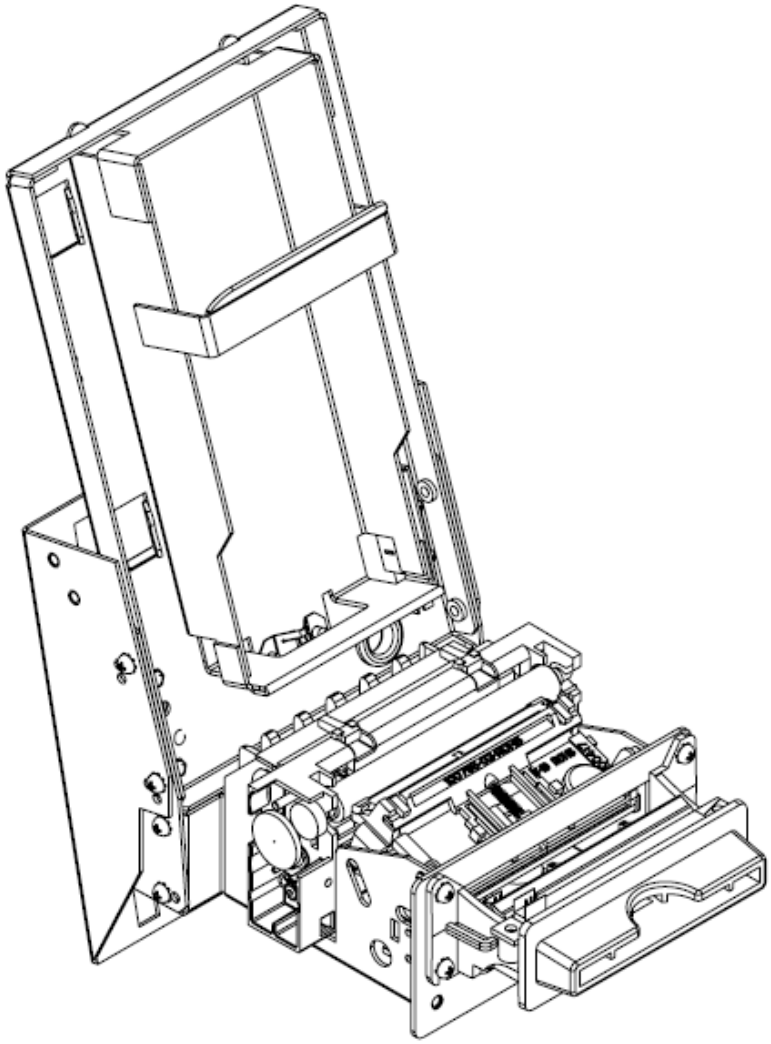


Figure 1: Nanoptix PayCheck Slim Printer

1.2 General specifications

Print Method	Direct Thermal
Resolution	8 dot/mm (203 dpi)
Print Width	64mm
Paper Width	65mm
Cartridge Size	200
Operating Temperature	0° to 50° C
Storage Temperature	-20° to 60° C
Operating Relative Humidity	5 to 90% RH at 50°C (non-condensing)
Communication Interface Options	Serial and USB
Memory/Firmware	8MB RAM, 2MB Flash and 1MBit EEPROM
Resident Character Sets	Arial Bold (6 sizes) Note: Other Character sets can be programmed quickly
Integrated Bar Codes	Interleaved 2 of 5, Code 39, Code 93, UPC-A & UPC-E, Codabar, EAN 8 & EAN 13, Code 128. Note: Other Bar Codes can be programmed quickly
Speed	Up to 200 mm/second (monochrome) Up to 125 mm/second (two-color mode)
Sensors	Paper in Tray open Top of form Paper low
Human Interface	Drop-in paper loading, status LED, paper feed button
Dimensions	120mm width x 248.5mm height x 129mm depth
Weight	1.215 Kg

Table 1: Specifications

1.3 Paper Loading

Change the paper when the paper is low or out.

Caution: Do not operate the printer or host computer if the printer runs out of paper. The printer will not operate without paper, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data may be lost.

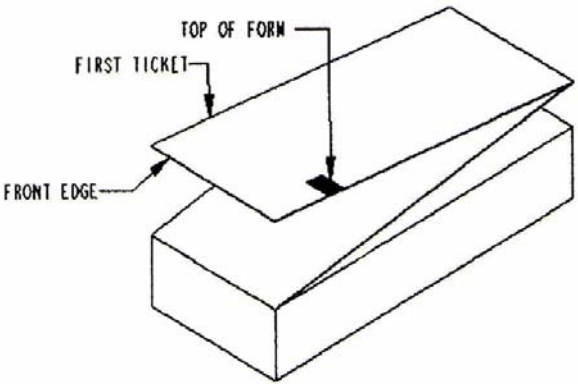
1) Remove ticket cartridge.

2) Drop ticket stack into ticket cartridge. The maximum stack that will fit in the ticket cartridge is 200.

3) Replace ticket cartridge.

4) Feed ticket into printer mechanism until resistance is met.

5) Paper will feed automatically; paper is loaded and printer is ready to print.



Ticket stack orientation:
The stack must be oriented so that it's top of form mark is on the leading edge of the ticket.

Figure 2: Ticket Stack Orientation

1.3.1 Paper Feed Button

Press on the Paper Feed Button to advance the paper. The paper will automatically feed.

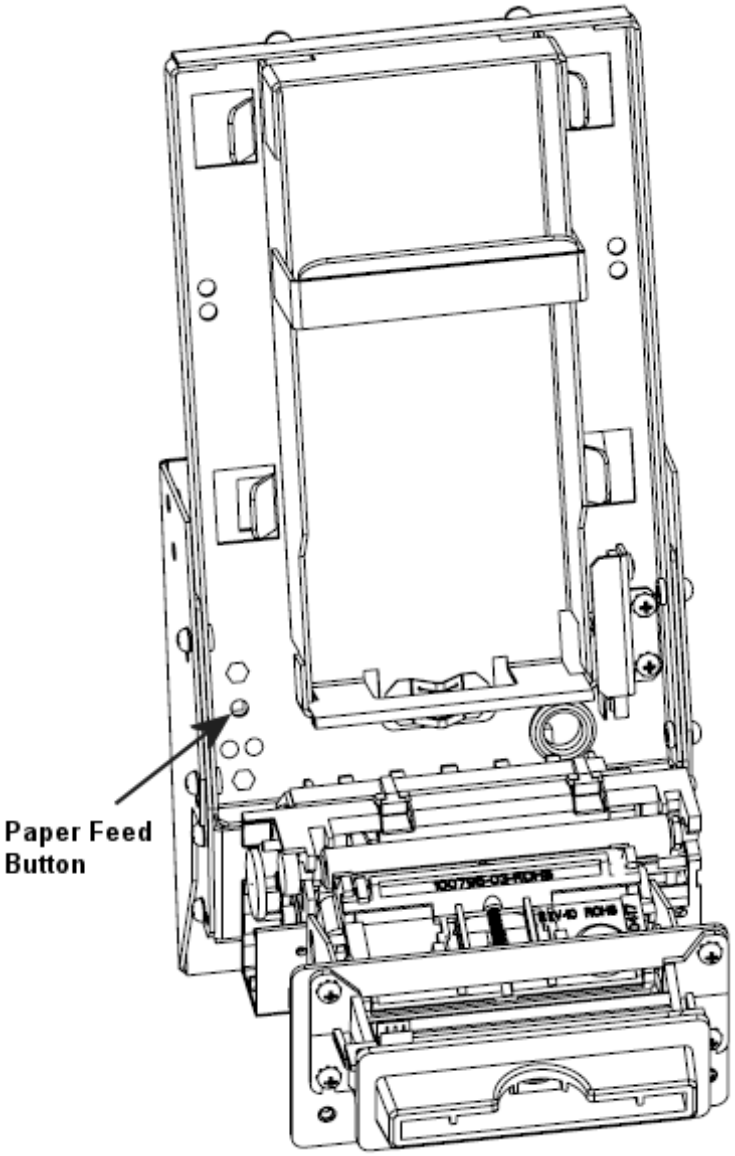


Figure 3: Paper Feed Button

1.4 Printer Controls

1.4.1 Printer Reset (Service use only)

To reset the printer, simply unplug and plug the cable. Once plugged in, the printer goes through a startup routine and resets itself.

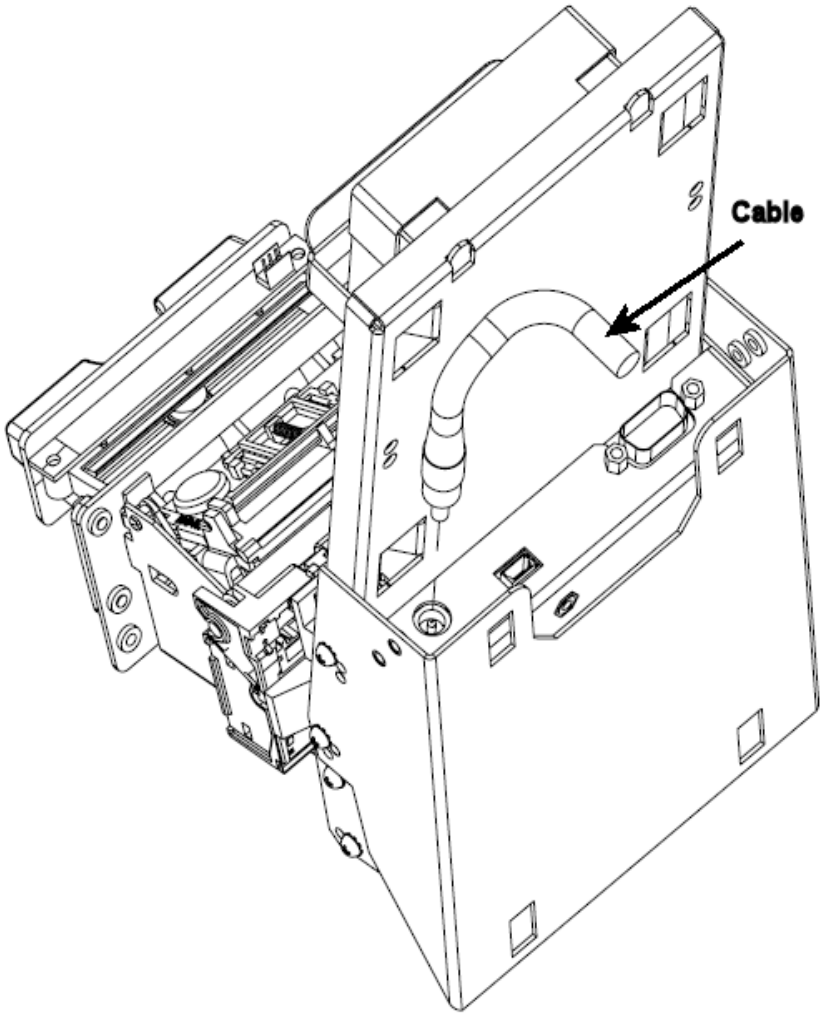


Figure 4: Printer Reset

1.4.2 LED

The LED on the main controller board shows the printer status. Please refer to section 1.5.1 for LED status and troubleshooting with LED. An optional external LED bezel can be connected through the front 3-pin Molex connector. The pin-out is described in section 2.1.1.

1.5 Printer Interface Ports

Port Identification	Connector Type	Function
A	24V DC Jack	Power Receptacle
B	USB type mini B	USB Communication
C	Serial Port	9-pin Serial Interface
D	3 pin “Molex type”	Bezel LED

Table 2: Interface Ports

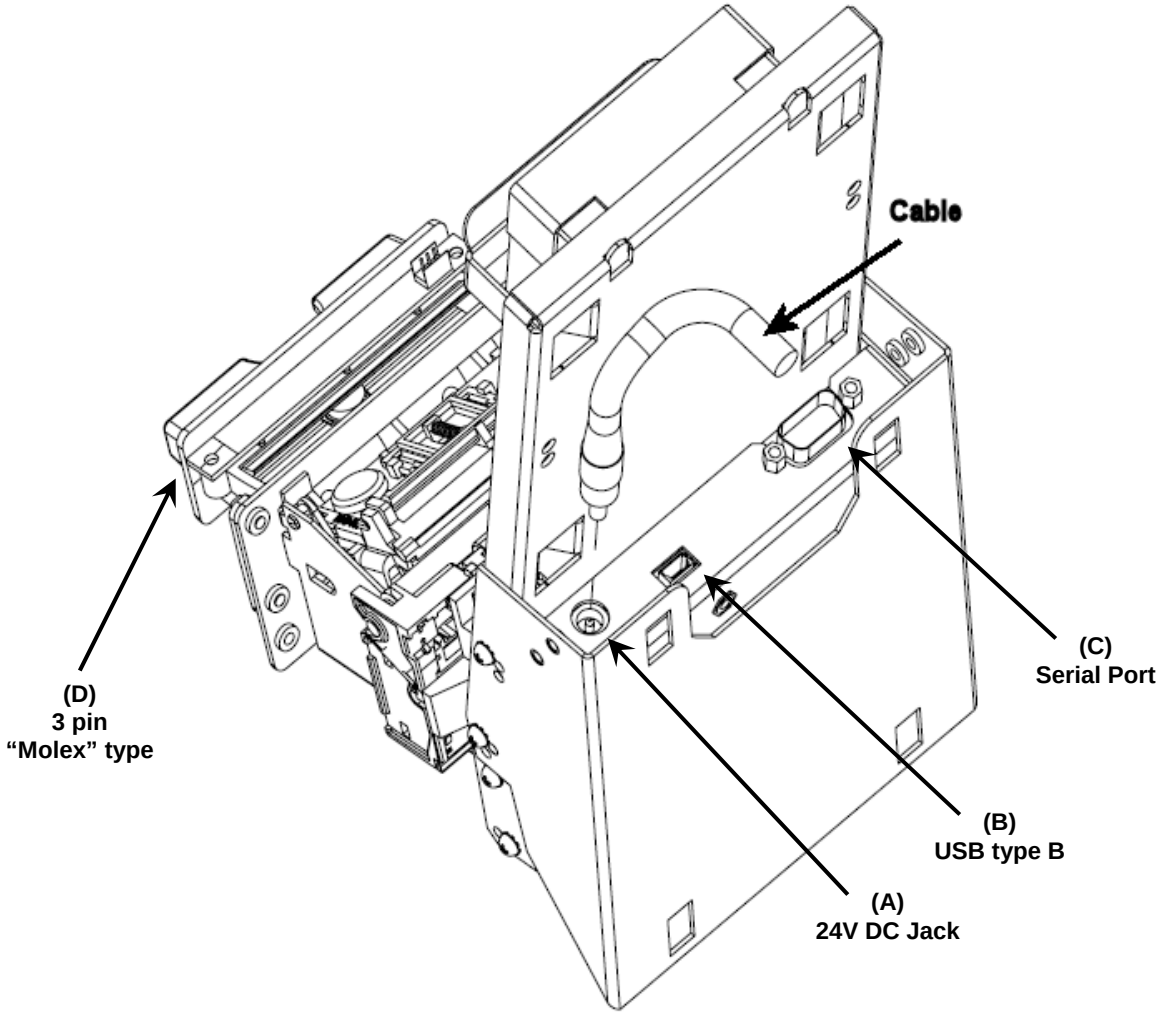


Figure 5: Interface Ports

1.5.1 LED

Note: An external LED bezel can be connected through the front 3-pin Molex connector. (Pin-out is described in section 2.1.1.)

Error LED (Red)	Status LED (Green)	Voltage LED (Red) (PayCheck 2 only)	Condition
OFF	ON	OFF	Printer Ready
ON	OFF	OFF	Paper Out
MED BLINK	OFF	OFF	Temperature Error
SLOW BLINK	OFF	ON (Bright)	Voltage Error (Over 26.2 VDC)
FAST BLINK	ON	OFF	Print Head Error
FAST BLINK	ON	OFF	Missing Black Index Mark
FAST BLINK	ON	OFF	Paper Jam

Table 3: LED Information

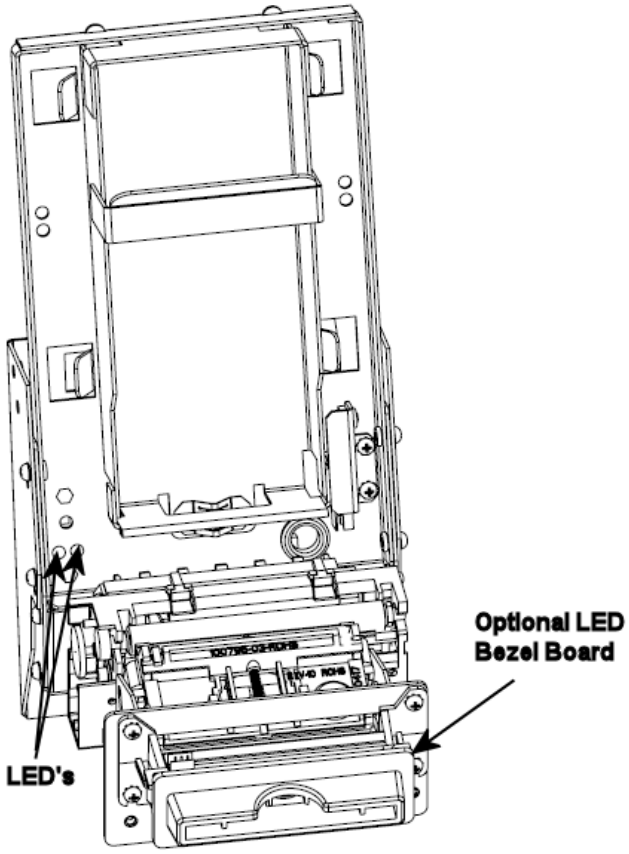


Figure 6: LED Positions

1.6 Testing the Printer

This test can be used to verify the correct operation of the printer. The test prints a resident ticket listing the current printer settings. This ticket can also be used to verify the printing quality.

To print the test ticket, power-on the printer while pressing and holding the Paper Feed Button (figure 3) for approximately 3 seconds. A test ticket similar to the one below will be printed approximately 5 seconds later. Press the paper feed button once more and the ticket will feed. Pressing the button again will result in blank tickets.

```
Model:                              PAYCHECK 3
Firmware:                           PAY-1.79U
Protocol:                           NTL
COMMUNICATION
  Interface:                        Serial
  Baud Rate:                        9600
  Data Bits:                        8
  Parity:                           NONE
  Handshaking:                      PRT+RTS
  Print mode:                       NTL
  Aux Port:                         Disabled
PRINT CONTROL
  Print Method:                     No HPQ
  Speed:                            150 mm/sec
  Black Bar Index:                  Right
  No HPQ Burn time:                 275 us
  Motor Current:                    2
  Real-Time Command:                Enabled
  Auto Reset Status:                Enabled
PRINTER ENVIRONMENT CONDITIONS
  Voltage:                          23.8 Volts
  Temperature:                      24 Celcius
SYSTEM RESOURCES
  FLASH:   -Used:      0
           -Free:      65535
LIBRARY INVENTORY
  Templates:  0,1,2,3,4,5,6,7,8,9,A,B
  Regions:1,2,3,4,5,6,7,8,h,9,A,B,C,D,E,F,G,I,J,K,L,N,O,P,Q,R,
  S,T, U,Z,X,a,b,c,d,e,f,g,i,j,k,l,m,n,o,p,q,
  Fonts:0,1,2,3,4,5,7,8,9,P,E,A,B
  Graphics:
MANUFACTURING INFORMATION
  Printer ID:
  Date Code:                        ffffffff
A to D:  03b4, 020e, 01cc, 03fe
Dip Switch Config (1234) : 0000
STATUS:
*s|0|PAY-1.79U|@|@|@|H|@|P|*
```

Figure 7: Sample Test Ticket

1.7 Clearing Jams

The Nanoptix PayCheck Slim printer's paper guide and printing mechanism roller are easily removed, providing full access to the paper path. With the roller removed, simply clear any debris in the gears or printer mechanism.

Figure 8: Clearing Jams

2 Troubleshooting the Printer

2.1 Basic Printer Operation

Although the Nanoptix PayCheck Slim printer is a complex device, its operation is quite simple. The printer requires two consumables to operate, (1) a regulated 24 VDC power source and (2) thermal paper. The printer is equipped with two communication interface ports: one mini USB port and one serial port both located at the top rear of the unit. A 3-pin I/O connector situated at the front of the unit can be used to control an external illuminated bezel.

A reflective optical sensor situated at the front of the ticket tray is used to detect a low paper condition. A second optical sensor is used in the printing mechanism assembly to detect the presence of paper and start the feeder motor when loading paper. This sensor also works in conjunction with a third optical sensor situated in the paper chute to realign paper back to its "ready" position.

When the sensors are not reporting any errors and a recognized data stream is sent to the printer, a printed ticket will result.

2.1.1 Communication Cables Pin-Out

RS-232 (DB-9) receptacle

Pin	Signal Name	Printer I/O	Host I/O	Printer Function
1	AUX_PWR	5V Output	n/a	Aux Power (100mA)
2	RS232_TXD	Output	Input	Data transmit
3	RS232_RXD	Input	Output	Data receive
4	RS232_CTS	Input	Output	Handshaking
5	DGND	Ground	Ground	Signal Ground/Aux Ground
6	RS232_RTS	Output	Input	Handshaking
7	RS232_CTS	Input	Output	Handshaking
8	RS232_RTS	Output	Input	Handshaking
9	NC or PWR	No connect	No connect	Reserved

Table 4: RS232 receptacle Interface (female)

The tables below detail the connection pin-out for the Serial interface on the printer side.

Pin	Signal Name	Printer I/O	Host I/O	Printer Function
1	Reset	Input	Output	Resets Printer
2	PRT_AUX_RXD	Input	Output	Auxiliary Receive
3	VAUX	Input	Output	Auxiliary Power
4	PRT_AUX_TXD	Output	Input	Auxiliary Transmit
5	Signal Ground	Signal Ground	Signal Ground	Signal Ground
6	24V	Power Input	n/a	Power Input
7	Signal Ground	Signal Ground	n/a	Signal Ground
8	24V	Power Input	n/a	Power Input
9	Bezel_pwm	24V Output	n/a	Bezel Driver
10	Signal Ground	Signal Ground	Signal Ground	Signal Ground
11	PRT_RS232_RXD	Input	Output	Data Receive
12	PRT_RS232_TXD	Output	Input	Data Transmit
13	PRT_Status	Output	Input	Pinter Ready
14	PRT_RS232_RTS	Output	Input	Handshake

Table 5: 14-Pin RS-232 Universal Interface Pin-Out

The tables below detail the connection pin-out for the front Bezel Connector (3-pin Molex).

Pin	Signal	Printer I/O
1	Bezel PWM	Output
2	24VDC	Output
3	GND	GND

Table 6: Pin-Out and signals of Front Molex (for Bezel)

2.2 Printing Problems

The table below can be used to determine the cause and resolution of the most common problems that may occur. If the information in this section does not correct the problem, contact a Nanoptix service representative.

Problem	Possible Causes	What to Do
Printer Does Not Function When Turned On	Printer not plugged in	Check that printer cables are properly connected at both ends
		Check that the host and power supply are getting power
Paper jam	Paper width out of specification	Test paper width for compliance
	Debris or partial ticket stuck in paper path	Open paper guide and detach roller, remove debris
	Paper's perforation burst strength out of spec	Test paper perforation for compliance
Noisy Feeder Motor (paper disengaged)	Printer is meant to be operated with paper engaged in the printing mechanism, failing to do so will cause gears to grind and slip, noise may result	Do not operate printer without any paper engaged in the printing mechanism Note: Never lubricate gears or any other part of the printer
Paper does not realign itself when a ticket is printed	Paper's alignment mark, (which is the black dot printed on the non-sensitive side of thermal paper) may be out of specification	The maximum reflectance of the alignment mark is 15% (infrared). Simply put, this means that the alignment mark's color should be an even/crisp black. If any white or gray is visible, it is an indication that the reflectance could be more than 15%
Line of print or section missing lengthwise on entire ticket	Paper's thermal coating inconsistent	Change the paper stack to make sure the thermal coating is not the source
	Thermal printing mechanism damaged	Contact customer service representative
Print is light or spotty	Thermal print head is dirty	Clean print head at recommended intervals
	Paper's thermal coating inconsistent	Change the paper stack to make sure the thermal coating is not the source

Table 7: Troubleshooting Printing Problems

2.2.1 Troubleshooting with LED

Error LED (Red)	Status LED (Green)	Condition
OFF	ON	Printer Powered or Ready
ON	ON	Paper Out
MED BLINK	ON	Temperature Error
SLOW BLINK	ON	Voltage Error (Over 26.2 VDC)
FAST BLINK	ON	Print Head Error
FAST BLINK	ON	Missing Black Index Mark
FAST BLINK	ON	Paper Jam

Table 8: Troubleshooting with LED

3 Media and Supplies Guide

3.1 Thermal Paper Specifications

NOTE: Qualified thermal paper with the following specifications is required for proper operation.

Width	65 mm +/-1mm (2.56 IN)
Length	156 mm +/- 1mm (6.14 IN)
Thickness	4.5 +0.1 -0.3 mil
Brightness	89%
Smoothness	2000 sec Avg.
Perforation burst strength	1.3 +/- 0.4 LBS (0.59 +/- 0.18 Kg.
Alignment Mark (TOF)	Optical Density 1.10 min.

Table 9: Paper Specifications

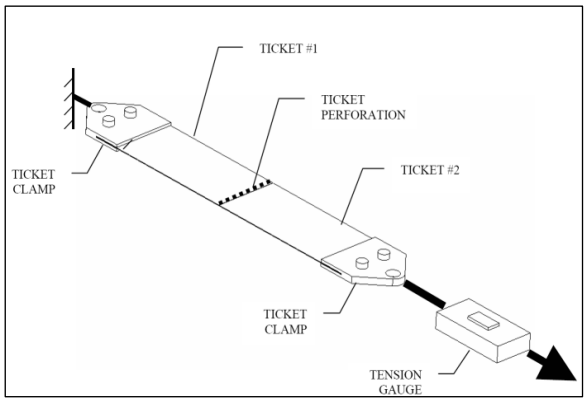


Figure 9: Perforation Test

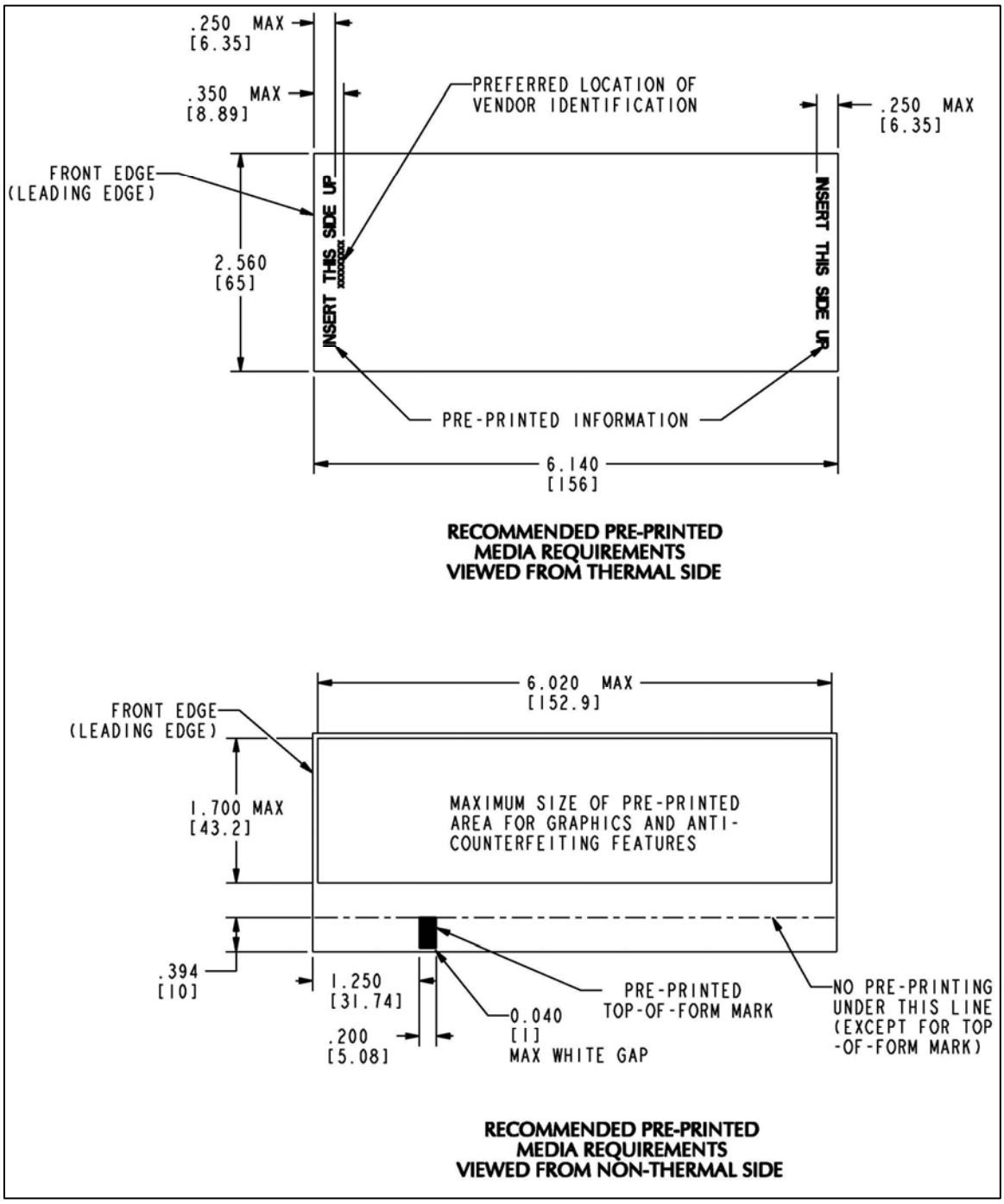


Figure 10: Ticket Specifications

3.2 Ordering Thermal Paper

The following paper grade produced by Appleton and Kanzaki Specialty Papers are recommended by Nanoptix. There are a number of paper converters qualified to supply this paper, provided the stacks are from these recommended grades.

Paper qualification services are offered by Nanoptix for additional grades not listed below.

Manufacturer	Numbers	Nanoptix part no	Paper Grade
Appleton Papers	Tel:920-991-8438	100505-3024 (200 stack)	Royale 800-4.5
Kanzaki Specialty Papers (USA)	Tel:888-526-9254 Fax: 413-731-8864	100505-3012 (200 stack)	TO-381-N

Table 10: Ordering Thermal Paper

3.3 Parts List

Item #	Part Number	Description
1	**103666-0000R**	**Metal Frame, PCB, (DB9 & mini-USB)**
2	**750037-0000R**	**Mech Braket Kit**
3	103671-0000R	Bracket, Mech
4	100041-1164R	screws, M3X6, 0.5, cross, zinc
5	**750038-0000R**	**Cover Plate Kit**
6	103669-0001R	Cover, Plate, For Tray w/ Tabs
7	100351-0002R	Ball stud,external 6-32
8	100063-1001R	Rubber Grommet 3/8" ID
9	100041-1164R	screws, M3X6, 0.5, cross, zinc
10	320005-0001R	Label, Paycheck Slim, Serial #
11	**750039-0000R**	**Print Mech Kit**
12	100350-0004R	Print Mechanism 82.5mm
13	100352-0000R	Mech Mount
14	100878-0000R	Clip, TOF Sensor
15	213001-0001R	HAP,TOF sensor, FPC circuit
16	100041-1166R	Screw, M3x10mm 0.5, cross, zinc
17	100041-1244R	Screw, M4x8mm, 0.7, cross, zinc
18	100068-0001R	Tie-Wrap, black, 4" nylon
19	320016-0001R	Label, Paycheck, Paper Insert.
20	**103239-0000R**	**Paper Guide Kit**
21	100417-0000R	Paper Guide - Upper
22	100612-0000R	Paper Guide - Lower
23	100795-0000R	Latch, Ticket Chute
24	100069-2003R	Spring, Compression - 0.625" Long
25	100069-1001R	Spring, Left Wound Torsion
26	100069-1002R	Spring, Right Wound Torsion
27	**750040-0000R**	**Main PCB Kit**
28	208004-0112R	BAP,Main Board, PCS
29	100029-3001R	4-40 Male Female Hex Spacers
30	100029-5202R	KEYSTONE PN# 8830
31	100041-1164R	screws, M3X6, 0.5, cross, zinc
32	**750041-0000R**	**Paper Feed Kit**
33	208006-0003R	BAP,Paperfeed,2LED,RA,47R,LS
34	210008-0006R	Harness, 4 wire straight
35	100041-1164R	screws, M3X6, 0.5, cross, zinc
36	320003-0000R	Label, Paper Feed, PCSLIM
37	**750042-0000R**	**Buzzer Kit**
38	102601-0000R	BAP, External Buzzer,LED
39	210014-0002R	HAP,Buzzer,1LED,JST,150mm
40	100041-1164R	screws, M3X6, 0.5, cross, zinc
41	**103245-0000R**	**Paper guide sensor Kit**
42	100420-0000R	PCB, Paper Guide
43	210008-0006R	Harness, 4 wire straight

Item #	Part Number	Description
44	**103663-0006R**	**Bezel Kit - short, w/red LED**
45	103491-0003R	Bezel, short red
46	208001-0005R	PCB, 4 LED Bezel, Red
47	102904-0000R	Harness, Bezel LED
48	100041-1164R	Screws, m3X6 cross, zinc, pan, sems
49	**750043-0000R**	**Paper Low Kit**
50	300058-0001R	Bracket, Sens, P Low, Inverted
51	100049-0107R	sensor,photo interrupter,3-7mm
52	210009-0001R	HAP, Sensor Harness,230mm
53	100041-1164R	screws, M3X6, 0.5, cross, zinc
54	100068-0001R	Tie-Wrap, black, 4" nylon
55	**750044-0000R**	**Ticket Tray Kit**
56	300061-0002R	Tickert Tray, 200 Inv W/Tabs
57	320018-0001R	Label, Paper Loading, Inverted
58	**210003-0002R**	**HAP,Bezel, Internal, 200mm**
59	**310006-0001R**	**Cover, Paper Guide (Blue Clip)**
		Thermal Print Head Cleaning supplies
60	**103218-0000N**	**Isopropyl Alcohol Pens (12/pkg)**
61	**103250-0000N**	**Presaturated IPA Swabs (50/box)**
62	**103251-0000N**	**Presaturated IPA wipes (100/box)**
63	**103217-0000N**	**Presaturated Cards (2.5" wide * 6" long, 25/pkg)**
		Thermal Paper
64	**100505-3049N**	**200 ticket stack (w/ Nanoptix logo)**
65	**100505-3012N**	**200 ticket stack (w/ blank white)**
		I/O Cables
66	**103483-0000R**	**Harness, Ticket Universal, 14Pin Plug (Power Only) to 14Pin Receptalce and DB9 Female**
67	**100390-0001R**	**Cable, USB, A-B, 6 ft.**
68	**210001-0001R**	**HAP,DB9P,14pinMolex,2pinDCJack**
		Power Supplies (Nanoptix Approved)
69	**210007-0202R**	**Power Supply w/14 Position Receptacle**
70	**102080-0000R**	**Power Cord - North American**
71	**750045-0000R**	**Mounting & Plunger Kit (optional)**
72	103672-0000R	Plunger Bracket
73	100041-1164R	screws, M3X6, 0.5, cross, zinc
74	103668-0000R	Bracket, Cabinet Mounting
75	100041-1165R	M3 x 8mm Pan Head SEMS

Table 11: Parts List

4 Mechanical Drawings

In order to be able to accommodate as many slim cabinets as possible, the PayCheck Slim printer has three different mounting positions. The three mounting options (position A, B and C) along with their dimensions are described in the following pages. The rear support bracket (Figure 11) and mounting points remain the same for all three mounting options.

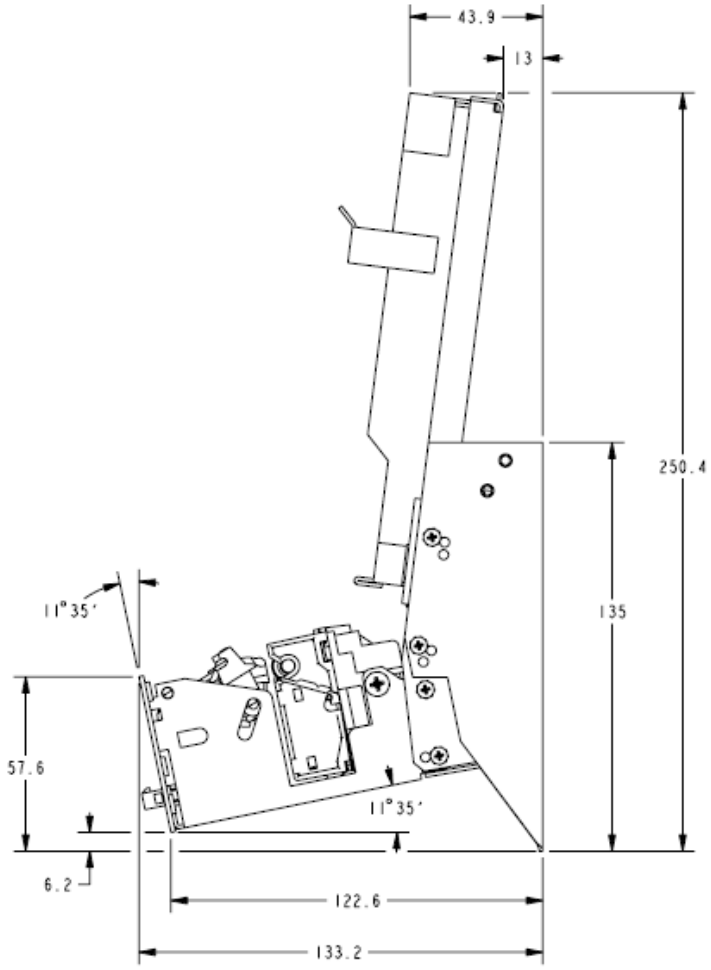


Figure 11: Side View - Mounted in Position A

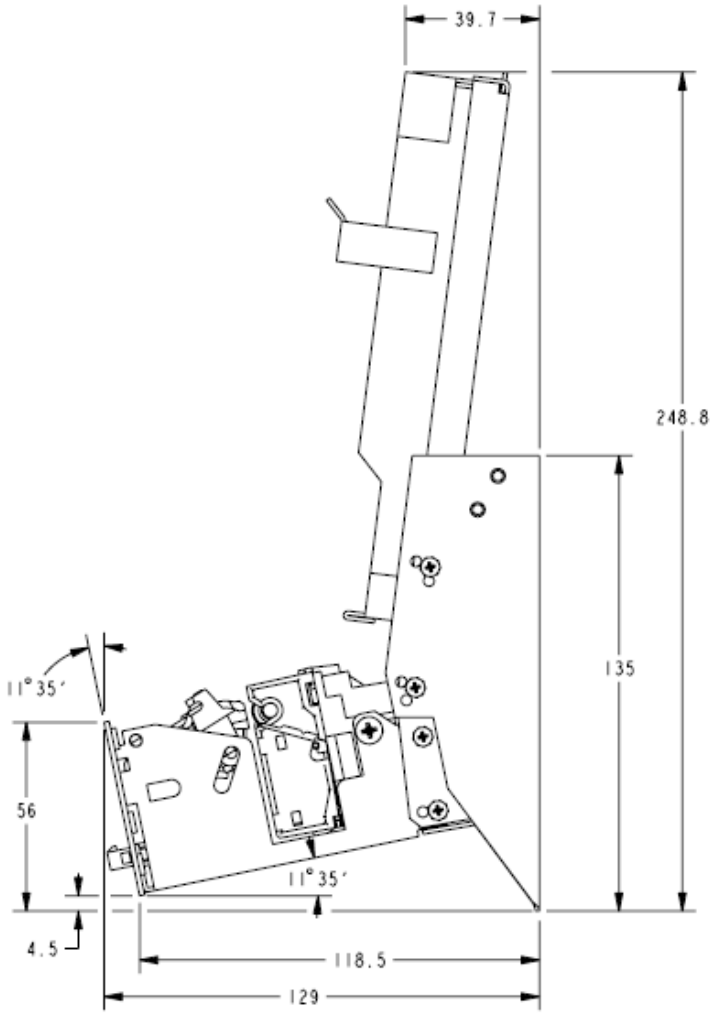


Figure 12: Side View - Mounted in Position B

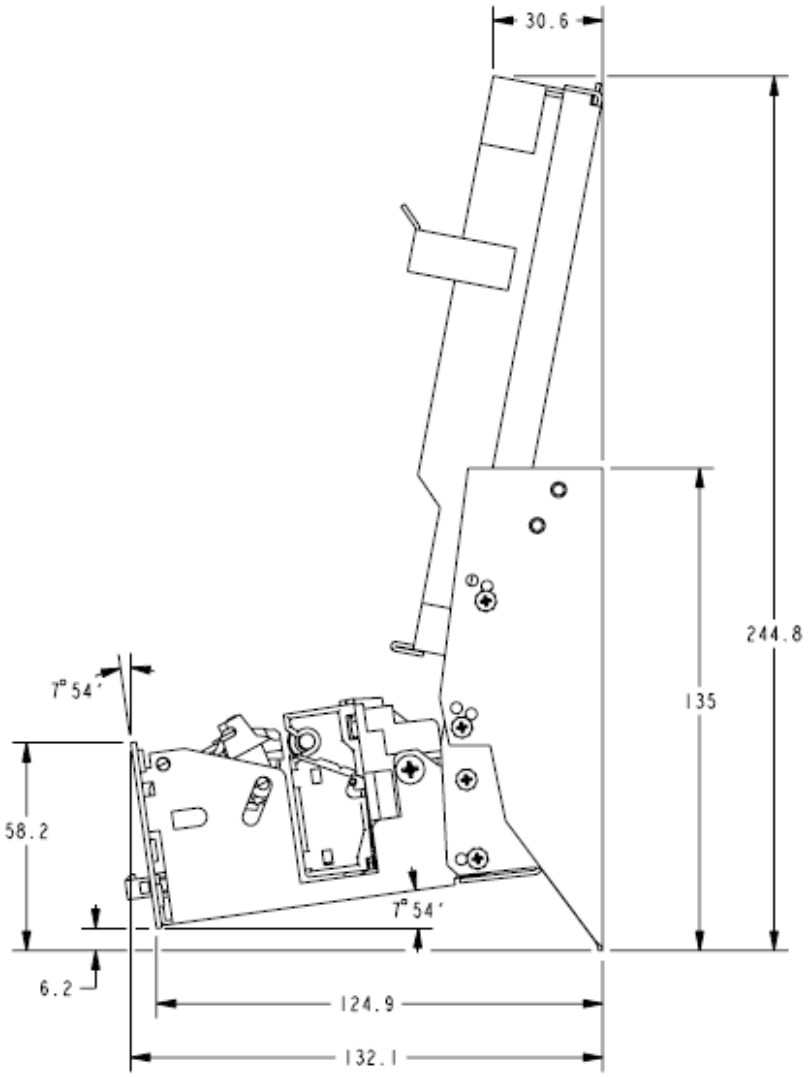


Figure 13: Side View - Mounted in Position C

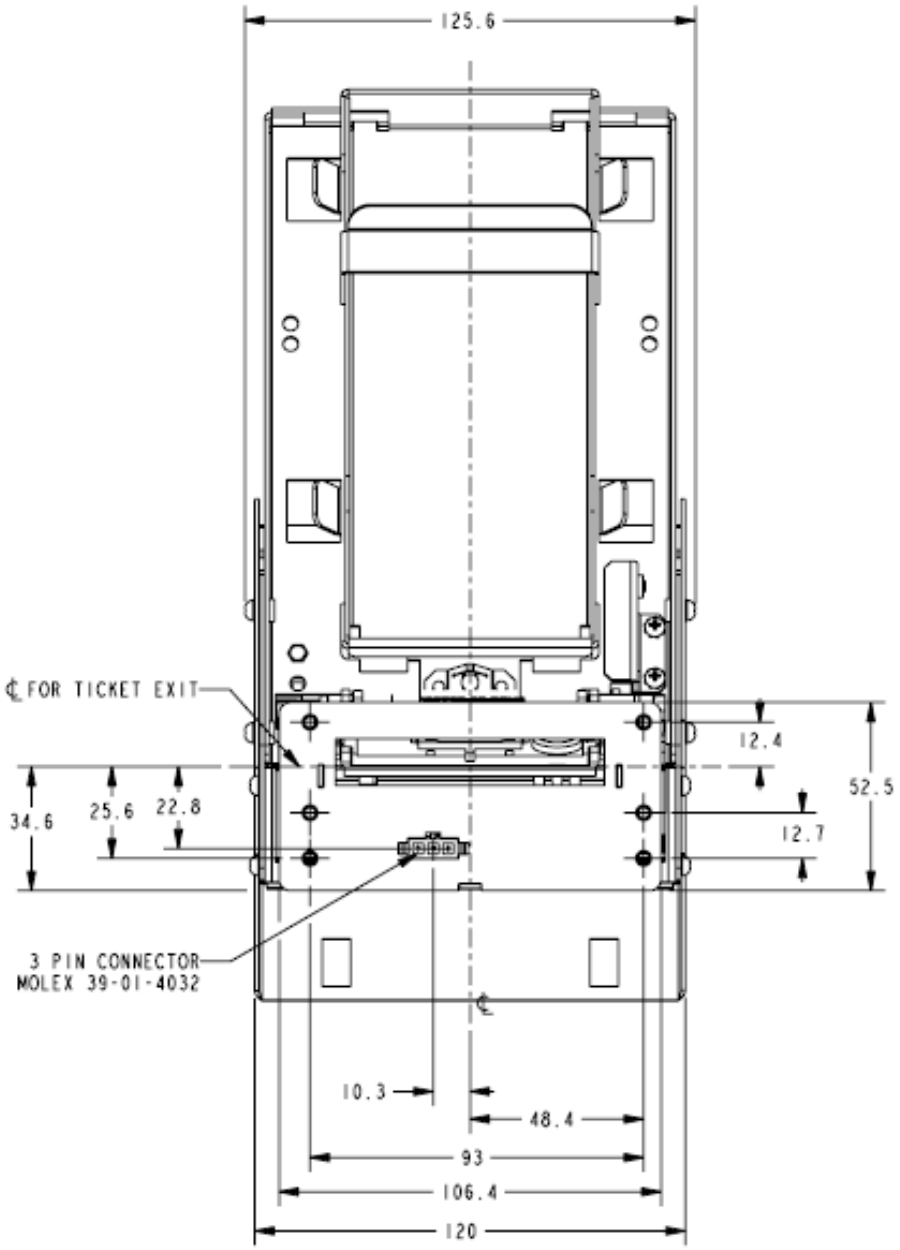


Figure 14: Front View

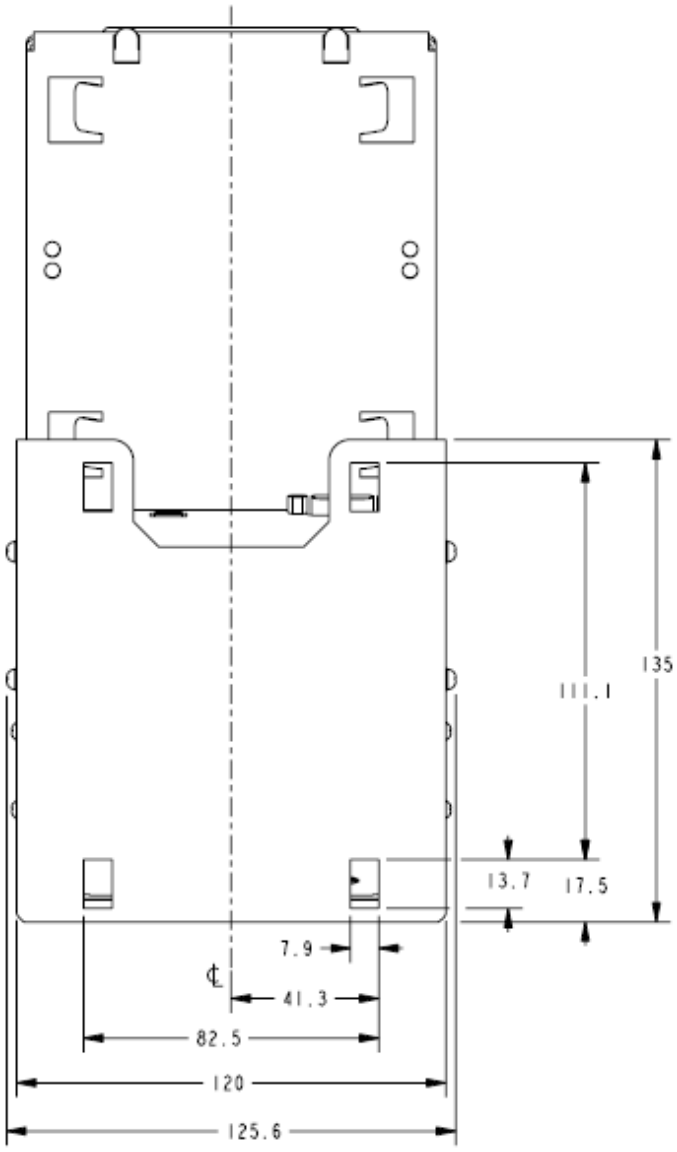


Figure 15: Back View

5 Spare parts replacement instructions

Use ESD protection (such as a wrist strap) anytime a PCB is exposed

Instruction A: Removal of the printing mechanism Kit

1. Remove the four (two on each side) Philips screws securing the metal mounting bracket from the printer

Figure 16: Mounting Bracket (A)

2. Remove the metal mounting bracket

Figure 17: Mounting Bracket (B)

3. Slide metal back plate from the chassis

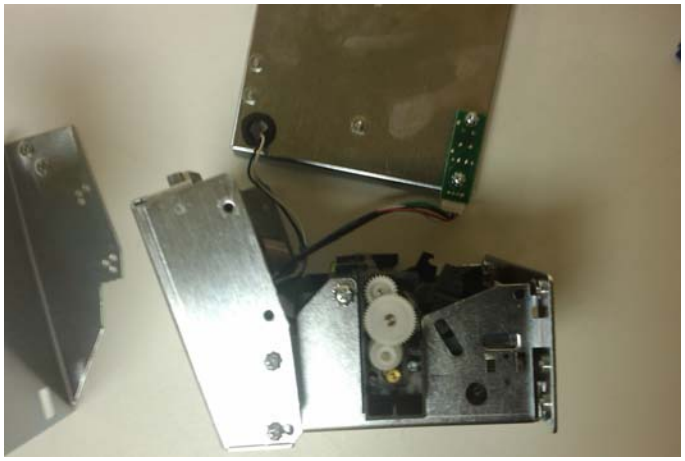


Figure 18: Back Plate

4. Remove the two (one on each side) Philips screws securing the printer mechanism to the printer
5. Lift printing mechanism straight up

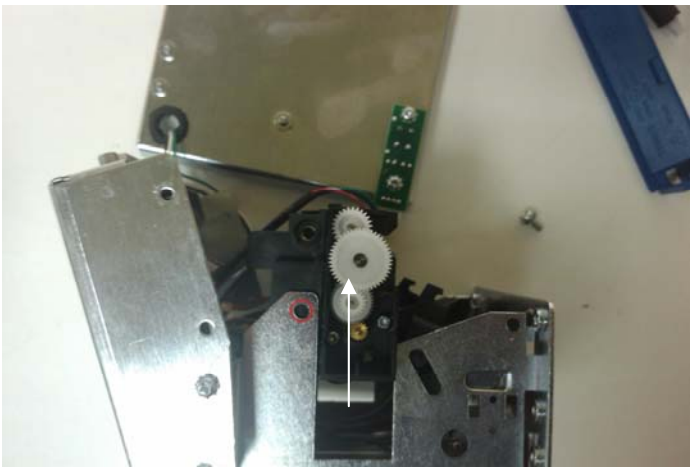


Figure 19: Printer Mech.

6. Cut securing tie wraps
7. Disconnect motor connector and flat cables
8. Disconnect mech grounding tab using “long nose” pliers

Instruction B: Removal of the main controller PCB

1. Remove the printing mechanism kit by following **Instruction A**

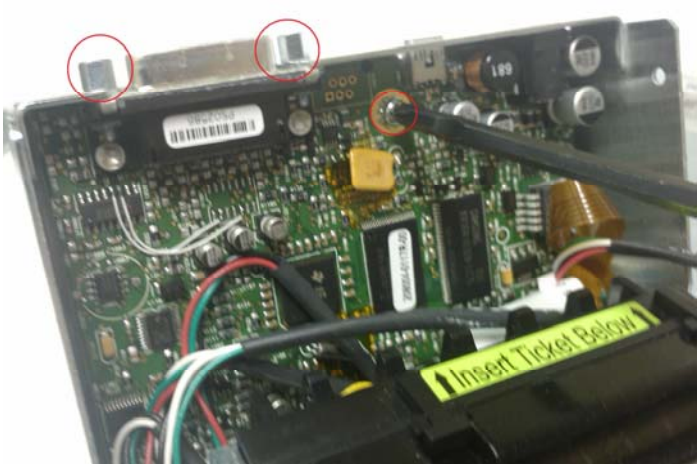


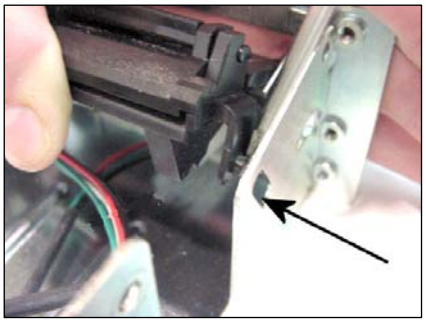
Figure 20: PCB Removal (A)

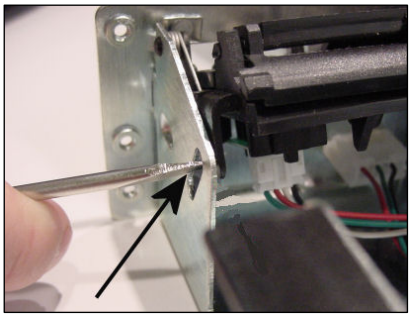
2. Remove PCB mounting Philips screw
3. Remove the two serial port nuts
4. Squeeze the three plastic holders one by one, and gently push the serial port down, freeing the PCB

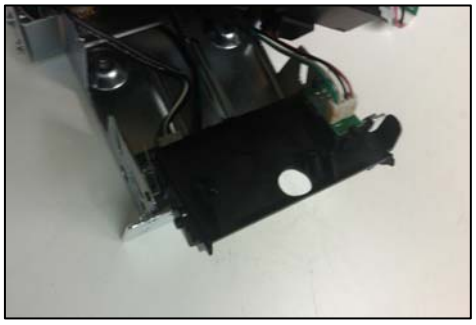
Figure 21: PCB Removal (B)

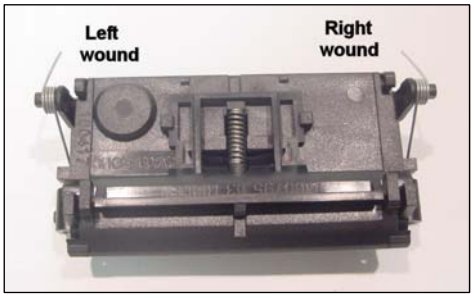
Instruction C: Removal of paper guide kit

1. Remove the printing mechanism kit by following **Instruction A**
2. Pry one side and hold
3. Keeping an upwards pressure, push on the other side's tab
4. Then remove by unlatching the final 2 tabs
   Note: during reassembly, make sure to install the right spring on the right side and the left spring on the left side.









Instruction D: Removal of the paper guide sensor

1. Remove paper guide kit by following **Instruction C**
2. Remove PCB by carefully prying latch

Figure 22: Paper Guide Sensor

Instruction E: Disassembly of printing mechanism kit

1. Remove print mechanism kit by following **Instruction A**
2. Cut tie wrap
3. Remove mech mount mounting screw
4. Separate mechanism by sliding mount upwards
5. Push sensor out using a screw driver
6. Remove print head by prying with a small screw driver
   (Make sure not to apply any pressure to the print head white flat cable)
7. Remove head by pushing down and back
   (Attention: springs may pop out of position)

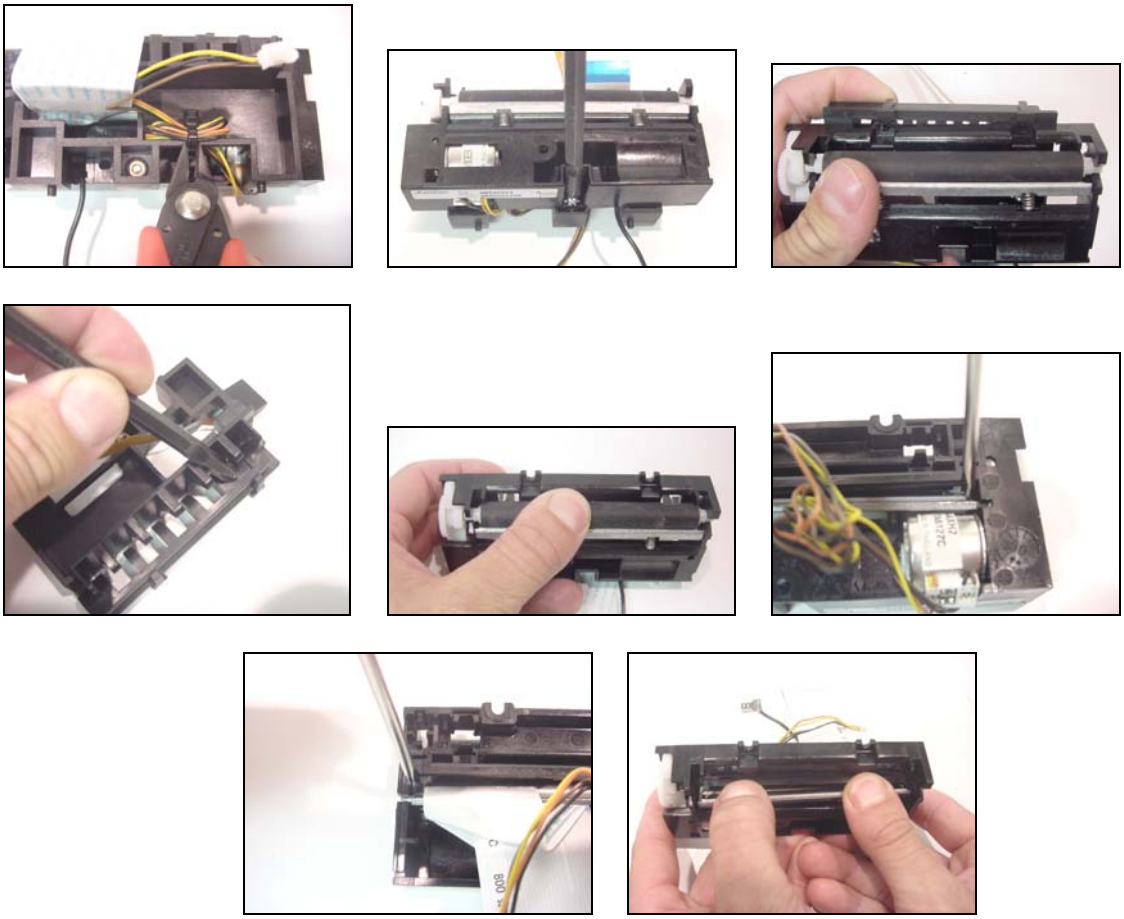


Figure 23: Disassembly

6 Printer Maintenance Instructions

Note: Under normal operating conditions, the minimum interval for cleaning the Nanoptix PayCheck Slim printer is *3 months* or *5 km* of paper printed, which ever comes first.

1. **Remove paper guide cover (when in use) & top paper guide. Then press down on bottom paper guide**

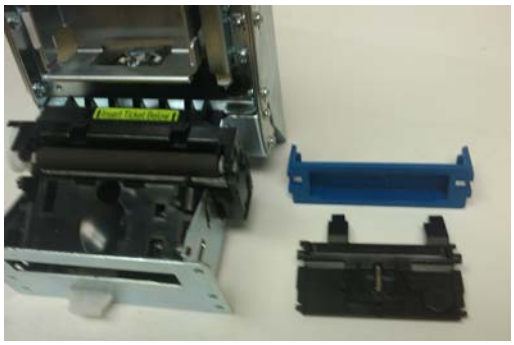


Figure 24: Remove top paper guide

2. **Remove roller by pressing down and rolling out towards front of printer**

Figure 25: Remove Roller

3. **Clean the roller with a cotton swab and isopropyl alcohol.**

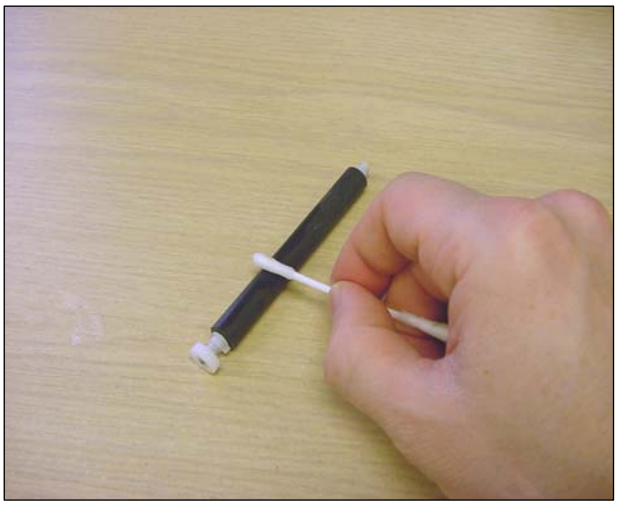


Figure 26: Clean Roller

4. **Clean paper guide sensor using cotton swab**

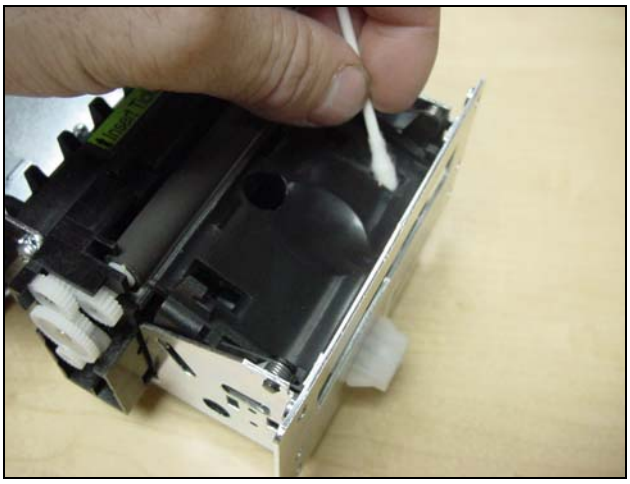


Figure 27: Clean paper guide sensor using cotton swab

5. Make sure that bottom paper guide can move up and down freely. Ensure that the gaps pointed by the arrows are equal and measures approximately ½ a millimeter (20 mils or the thickness of 5 sheets of TITO paper). If not, readjust the frame to ensure proper alignment.

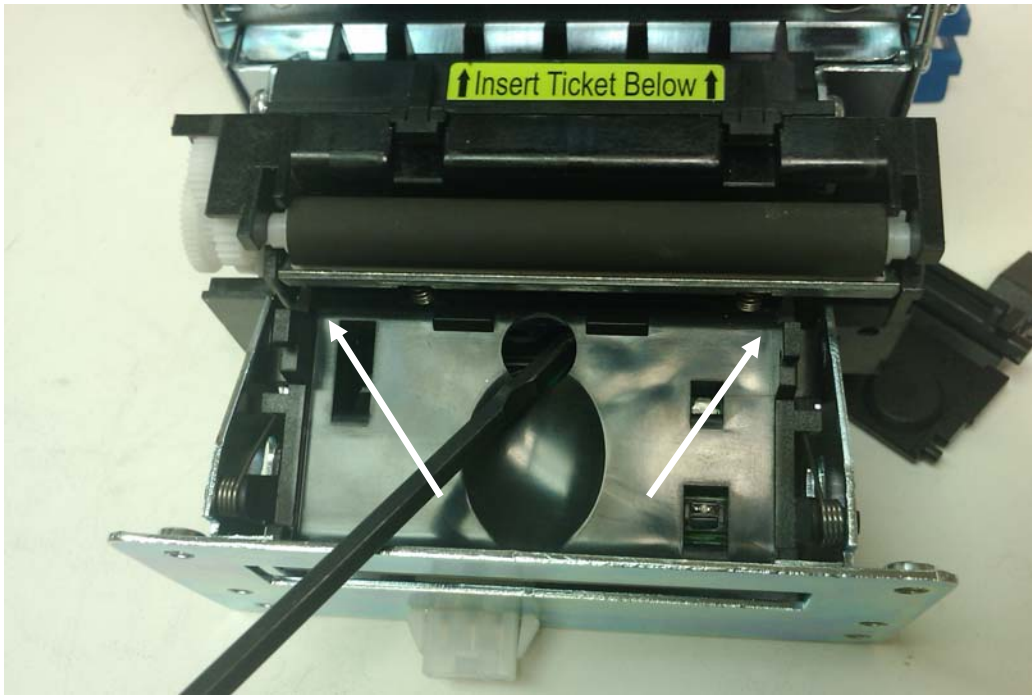


Figure 28: Bottom paper guide inspection

6. **Visually inspect the two inner sides of the bottom paper guide. If excessive wear is visible (deep grooves caused by paper), bottom paper guide should be replaced**

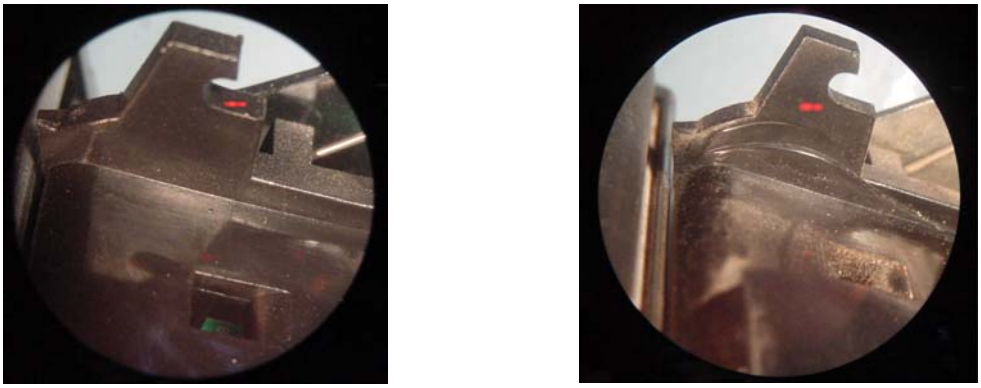


Figure 29: Inspect Paper Guide

Good **Replace**

7. **Clear dust off gears using light brush**

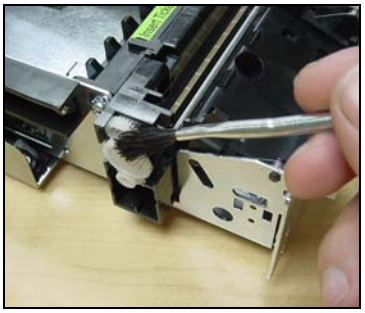


Figure 30: Clear dust off gears using light brush

8. Clean the print line (black line on the print head) with a cotton swab and isopropyl alcohol.

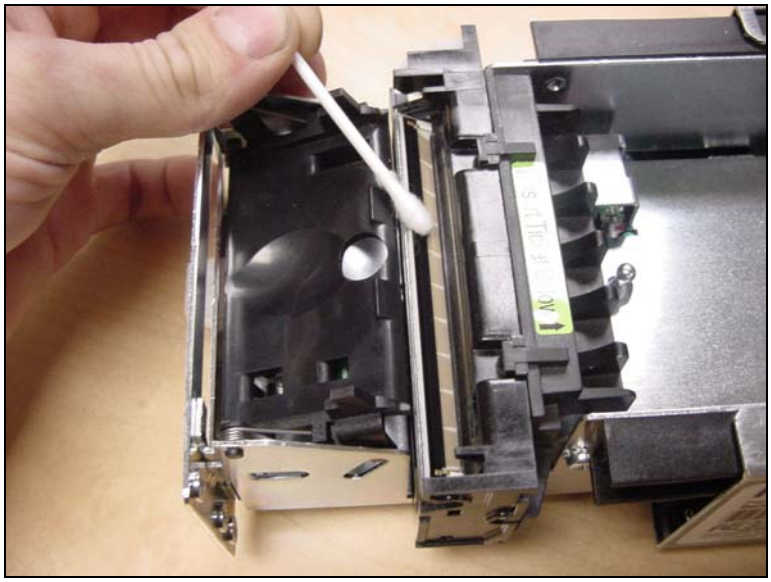


Figure 31: Clean Print Line

7 Service & Support

7.1 Returning printers back to Nanoptix for repairs (RMA)

- Send repair approval request to Nanoptix Inc. which should include:
  - Printer model #
  - Serial #
  - Brief problem description
- Ship defective products to Nanoptix Inc.
- Ensure that each package being sent is identified by the specified RMA number

NOTE: Make sure to place a blank ticket or a piece of paper between thermal print head and roller for shipping and storage.

United States of America
RMA # XXXXXX
Nanoptix Inc.
C/o Brunswick Brokers
48 Customs Loop
Houlton, ME, USA
04730

Canada and International
RMA # XXXXXX
Nanoptix Inc.
699 Champlain St.
Dieppe, NB, Canada
E1A 1P6

NOTE: It is imperative to have every package clearly identified by an RMA number.

7.2 Technical Support Contact Information

Service department
Nanoptix Inc.
699 Champlain St.
Dieppe, NB, Canada
E1A 1P6
Tel: 506.384.3388
Fax: 506.384.3588
E-mail: service@nanoptix.com
Web site: www.nanoptix.com